Effect of Certified Organic Production Systems on the Livelihood of Smallholder Farmers in Kenya

Oscar Ingasia Ayuya

A Thesis Submitted to the Graduate School in Partial Fulfilment for the Requirements of the Award of PhD Degree in Agricultural Economics of Egerton University

Egerton University

April, 2015
ABSTRACT
The main objective of the study was to assess the effect of certified organic production systems on the livelihood of smallholder producers in Kenya. The study followed an explanatory research design using two purposively pro-poor chosen case studies (honey production in Mwingi district and vegetables production in Ngong district). Collection of primary data was through face-to-face interviews using pre-tested semi-structured questionnaire. Collection of contextual data was through focus group discussions. Poverty and women empowerment was measured using multidimensional methodology while nutritional security by means of household dietary diversity index. Data was analyzed by descriptive statistics, heterogeneous treatment effect model, endogenous switching regression as well as univariate and multivariate and two-Limit Tobit. Findings were that the economically and socially advantaged farmers benefited most in certified organic vegetable production systems, in terms of household income, while the opposite was true in certified organic honey production system. Certified organic producers were 7% and 18% less likely to be poor compared to non-participating among vegetable and honey producers, respectively. On average, women involvement in agricultural decision making was about 38% and 35% in vegetable and honey producing households, respectively. Households who were not certified would have reported about 24% and 31% more HDDS among vegetable and honey producers respectively if they participated in certified organic production. To public policy, enhancing pro-poor participation in such emerging high value supply chains requires proper targeting and screening of farmers during enrolment as well as enhancing other drivers that increase the likelihood of participation like training programs and building higher social capital. In terms of women empowerment, participation in off-farm income activities by women could prove essential in enhancing their empowerment in agriculture raising a concern to policy makers on how to create more sustainable off-farm activities opportunities for women to induce their empowerment further. Additionally, promotion of integrated economic, environmental and nutritional behavioural change farmer extension programmes through certified organic production systems schemes proves imperative among smallholder farmers in making informed food choices resulting to better household nutritional outcomes. Future research based on repeated surveys would be required to look into long-term impact of participation in certified organic production in smallholder production systems.
# TABLE OF CONTENTS

DECLARATION AND RECOMMENDATION .................................................................1
COPYRIGHT ...............................................................................................................Error! Bookmark not defined.
DEDICATION ...........................................................................................................Error! Bookmark not defined.
ACKNOWLEDGEMENT .............................................................................................Error! Bookmark not defined.
ABSTRACT ................................................................................................................2
TABLE OF CONTENTS ..............................................................................................3
LIST OF TABLES ........................................................................................................Error! Bookmark not defined.
LIST OF FIGURES ......................................................................................................Error! Bookmark not defined.
LIST OF ABBREVIATIONS AND ACRONYMS .......................................................Error! Bookmark not defined.

CHAPTER ONE: INTRODUCTION ............................................................................Error! Bookmark not defined.

1.1 Background information ................................................................................. Error! Bookmark not defined.

1.2 Statement of the problem .............................................................................. Error! Bookmark not defined.

1.3 Objectives ....................................................................................................... Error! Bookmark not defined.

1.3.1 General objective ......................................................................................... Error! Bookmark not defined.

1.3.2 Specific objectives ....................................................................................... Error! Bookmark not defined.

1.4 Hypothesis ....................................................................................................... Error! Bookmark not defined.

1.5 Justification of the study .............................................................................. Error! Bookmark not defined.

1.6 Scope and limitation of the study ................................................................. Error! Bookmark not defined.

1.7 Operational definition of terms ..................................................................... Error! Bookmark not defined.

CHAPTER TWO: LITERATURE REVIEW ..............................................................Error! Bookmark not defined.

2.1 Definition and principles of organic agriculture ......................................... Error! Bookmark not defined.

2.2 Benefits of organic production ..................................................................... Error! Bookmark not defined.

2.3 Women and their empowerment in agriculture .......................................... Error! Bookmark not defined.

2.4 Poverty measurement and analysis in Kenya ............................................ Error! Bookmark not defined.

2.5 Impact evaluation in agriculture ................................................................. Error! Bookmark not defined.

2.6 Overview of certified organic farming in Africa and Kenya .......................Error! Bookmark not defined.
2.7 Theoretical and conceptual framework

2.7.1 Theoretical framework

2.7.2 Conceptual framework

CHAPTER THREE: METHODOLOGY

3.1 Study area

3.2 Sample size and sampling procedure

3.3 Multidimensional poverty measurement

3.4 Measurement of WEIA

3.5 Analytical framework

3.5.1 Modelling heterogeneity treatment effects of certified organic production on household income

3.5.2 Modelling effect of certified organic farming on poverty

3.5.3 Modelling determinants of WEIA

3.5.4 Modeling effect of participation in certified organic production on HDDS

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Descriptive statistics

4.1.1 Farmer characteristics

4.1.2 Farm characteristics

4.1.3 Institutional and access characteristics

4.1.4 Selected agronomic practices in organic vegetable production systems

4.1.5 Level of WEIA

4.1.6 Household dietary diversity
4.2 Determinants of participation in certified organic farming.

4.3 Effects of organic certification on household income under the assumption of homogeneity.

4.4 Heterogeneous organic certification effects on household income.

4.5 Determinants of multidimensional poverty status.

4.6 Mean treatment effects on poverty.

4.7 Determinants of WEIA.

4.8 Determinants of HDDS level.

4.9 HDDS treatment and heterogeneity effects.

CHAPTER FIVE: CONCLUSION AND POLICY IMPLICATIONS.

5.1 Conclusion.

5.2 Policy recommendation.

5.3 Further research.

REFERENCES.

APPENDIX 1: HOUSEHOLD SURVEY QUESTIONNAIRE.

APPENDIX 2: WOMEN EMPOWERMENT SURVEY QUESTIONNAIRE.

APPENDIX 3: ITEMS USED IN MEASURING WOMEN EMPOWERMENT IN LEADERSHIP DIMENSION.

APPENDIX 4: FACTORS INFLUENCING FARMERS’ PARTICIPATION IN CERTIFIED ORGANIC PRODUCTION.